Observing Plans

Observing plans are at:
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/index.php
Username is sdss
Password is 54chips
Web page will be fixed by John.
More info on targets is at with images:
http://sdssdp47.fnal.gov/sdsssn_data/candidates/
APO Website Page
http://www.apo.nmsu.edu/

Need to put the observing session TUI catalog on my local computer.
TUI catalog files are either at:
<sdssdp47.fnal.gov> **/data/dp47.b/data/www/html/sdsssn_data/APOSNspectro/TUI**
Which can also be accessed on the WEB at
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/TUI/
Or at:
<visitor1@tycho.apo.nmsu.edu> SDSS_SN
Password is Z&5kuq6-

Finding Charts

Will also need Finding Chart (image).
Finding Chart will also be on APO tycho as well.
Finding Chart are also at:
/data/dp47.b/data/www/html/sdsssn_data/candidates/images
There is a large list of SN_XXXX directories. In each directory there is an /objects directory

Finding chart is also on WEB at:
http://sdssdp47.fnal.gov/sdsssn_data/candidates/examineCand.php?cid=13135
Where the supernova is SN13135 in this example

View image on Finding Chart DS9
Rotate Image by 90 degrees to get image with declination up-down
SN is always at Pixel coord 188, 188

To make the image look like what it will look like in viewfinder with the slit rotated at angle theta, change the rotation angle on the Pan/Zoom of DS9 to 90degrees - theta.

For setting up DS9 with HORIZON + 90, john Marriner gives the following
It's HORIZON + 90. So the angle depends the telescope pointing. But for targets that are overhead it's the same as OBJECT+90. Since you normally try to measure stuff when it's overhead, the difference between vertical relative to the horizon and OBJECT vertical (meaning alligned at constant RA) is about the same.

Instrument Setup

For first 1/2 nights, start shift 1/2 hour before sunset. Get cals and biases done so APO can open the dome at sunset and begin cooling scope down.
Start an observing log:
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/pick_night.php

For second 1/2 nights start shift 15 minutes before schedule. Cal stars can be done during twilight. Do bias while APO is closing the dome. Finish flats and wavecals after the dome is closed

To connect to APO from TUI, the Program ID is UC01 or UW07. The password is fiddleDeDee
Select the directory you would like the images to go under Status/TUI/Preferences/Exposures
The science images are also stored in <visitor1> /export/images

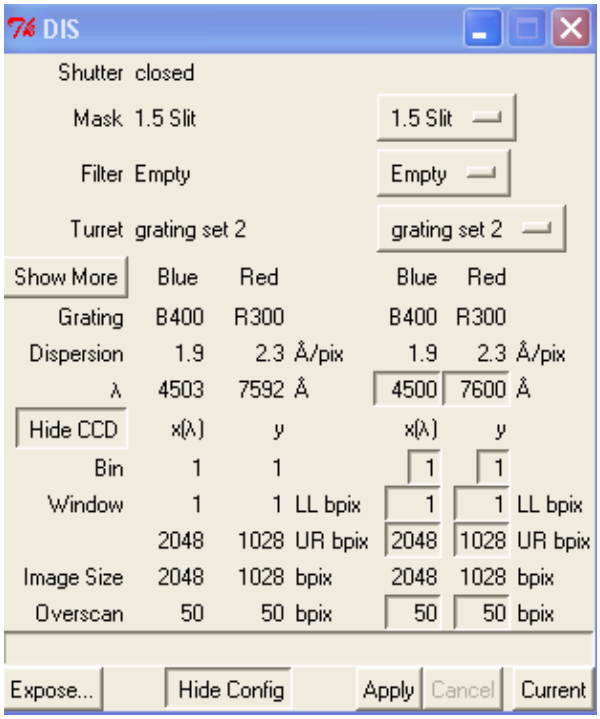
Load TUI catalog in the Status/TCC/Slew box where it says catalog
Check to see that you have permission in the Status/TUI/Permissions window

Set the place you would like the fits files to be stored on your local machine in the Status/Preferences/Exposures/Save to menu.
Also select Auto Get to have fits files stored on your local machine.
Select Apply on the preferences menu to enact choices

At beginning of session always check that DIS is setup correctly

Dispersion Grating	blue low/red medium (Grating Set 2)
Nominal center wavelengths	blue 4500/red 7600
Long slit	1.5 arc-sec
Binning (x,y)	(1,1)
Lower left (x,y) (LL bpix)	(1,1)
Upper right (x,y)	(2048,1028)
Overscan (x,y)	(50,50)
Long slit	1.5 arc-sec

Supernova Spectroscopic Observing Guidelines
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/observing.html
Screen clipping taken: 9/21/2006, 4:19 AM



Screen clipping taken: 9/21/2006, 4:20 AM

Changing grating sets rotates a lazy Susan in DIS. Changing the wave centers changes the tilts of

the gratings w.r.t the CCD
Make sure Grating is B400 R300 and the wave centers are 4500B 7600R. The readback should match the set by +/- 8Angs.
Check binning, image size, and over scans

Calibration

Type	No. Exposures	Exposure Length (sec)
Bias	5	--
Flat (bright quartz lamp)	3	120
Wavecal (HeNeAr)	2	60

Supernova Spectroscopic Observing Guidelines
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/observing.html
Screen clipping taken: 9/21/2006, 5:18 AM

File Naming Conventions

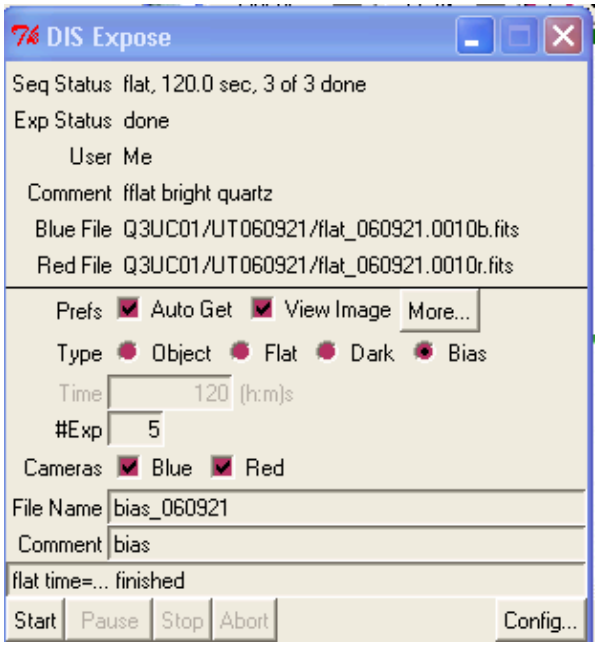
Files should be named according to the following scheme, where UTD refers to the 5 Universal Time Date as a 6 digit number in the form YYMMDD. The sequence numbers (xxx) should increase monotonically, independently of the prefix name.

File type	Name
Bias	bias_UTD.xxxx(b,r)
Flat	flat_UTD.xxxx(b,r)
Wavecal	wavecal_UTD.xxxx(b,r)
Flux standard	sn_UTD.xxxx(b,r)
SN targets	sn_UTD.xxxx(b,r)

The files should contain an appropriate header comment: "Bias", "Flat", "Wavecal", the name of the standard (e.g., "Feige110"), or the supernova target (e.g., "SDSS_SN1").

Supernova Spectroscopic Observing Guidelines
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/observing.html
Screen clipping taken: 9/21/2006, 5:20 AM

Bias Cal
Under the expose menu of Status/Inst/DIS/Exposure box:
set the type to BIAS, put in 5 exposures, put the file name
Note: Even though the bias does not require an exposure time, there is a "feature" in the software that requires an exposure time to be entered. However, the exposure time cannot be entered while the type is set to Bias. Unselect bias, enter the exposure time and re-select bias.



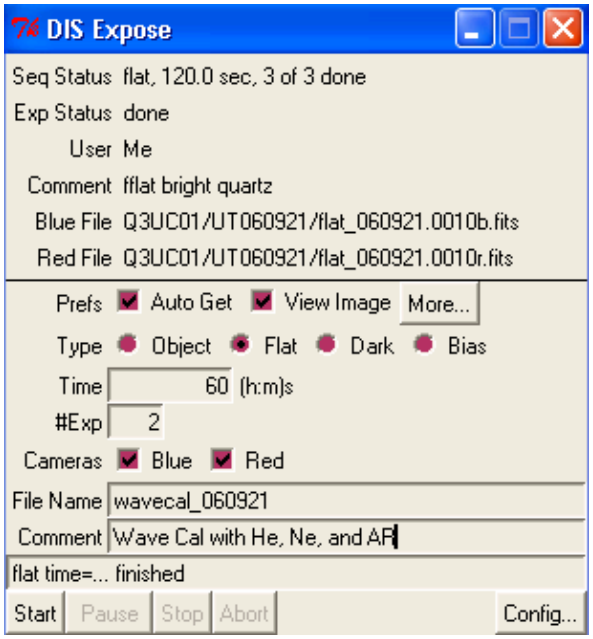
Screen clipping taken: 9/21/2006, 5:24 AM

Start exposures and enter in observing log
Each exposure gets a separate line

Prefix	Exp#	Object	Exp. Time	UT Time	Airmass	Cts	Epoch	Slitview	Notes
(text)	(num)	(select)	(in sec)	(hh:mm)	(num)	(num)	(num)	(Exp #)	(text)
bias_060921	1	Bias		07:42:00					
bias_060921	2	Bias		07:42:00					
bias_060921	3	Bias		07:42:00					
bias_060921	4	Bias		07:42:00					
bias_060921	5	Bias		07:42:00					

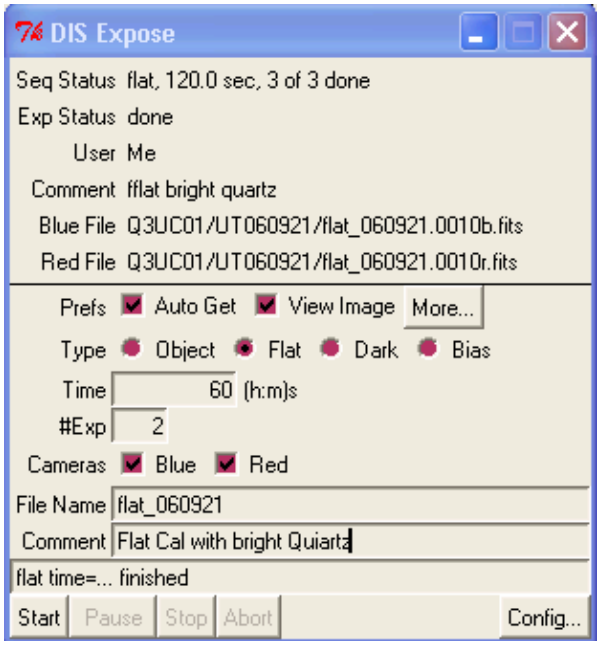
Supernova Spectra Database: Observing Log
http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/show_night.php
Screen clipping taken: 9/21/2006, 5:27 AM

Next do Wavecal
Make sure with APO that the primary mirror is closed and the eyelid is open
Turn the He, Ne, and Ar, truss lamps on. This is done under the Status/Misc/Truss Lamps box
For the time being check with APO that the lamps did in fact go on.
Under the expose menu of Status/Inst/DIS/Exposure box:
set the type to FLAT, put in 2 exposures at 60sec, put the file name
After exposures record in observing log.



Screen clipping taken: 9/21/2006, 5:35 AM

Next do Flat Cal
Make sure with APO that the primary mirror is closed and the eyelid is open
Turn the He, Ne, and Ar, truss lamps off.
Turn the bright Quartz truss lamps ON
This is done under the Status/Misc/Truss Lamps box
Under the expose menu of Status/Inst/DIS/Exposure box:
set the type to FLAT, put in 3 exposures at 120sec, put the file name
After exposures record in observing log.



Screen clipping taken: 9/21/2006, 5:42 AM

Science Exposures

Make sure all cal lamps are off
Have observing spec open the primary covers
You can usually start observing 50 minutes after sunset (+/-10 minutes)
Load object from the TUI catalog (Status/TCC/Slew)

Inform the operators you are going to slew.
Slew the telescope

Bring up DIS Slit Viewer under the Status/Guide Menu
Set the exposure time
17th magnitude = 10sec
20th magnitude = 60 sec
Field stars 5 seconds
Expose to find the target.

The DIS Slit exposure will be put into a folder called DCAM on the local machine with the path set in Status/Preferences/Exposure. The name of the files is automatically chosen by the slit viewer software. One can use two frames on DS9 with the Slit Exposure in one frame and the rotated finding chart in the other frame.

After identifying the target, Control Click on the target will slew the telescope to put the object in the sweet spot of the CCD.
The sweet spot of the CCD is a little to the left of center.
To tweek the position, open the Offset control under Status/TCC
Set type to ObjectXY
Positive X moves stars to the left
Positive Y moves stars down
The absolute reference is set when the telescope was slewed initially or controlled clicked.
Setting 0,0 an absolute will go to initial position. Hitting twice on absolute will do nothing the second hit.
The relative reference is based on the last position. Entering 0,0 in relative will not move the scope.
Scan up and down to make sure object I in the center of the slit.
The slit view is 159x159 Arc-sec. The scope can step at 0.1 arc-sec
Note that Manual on the guide selection just keeps taking images and updating the display.
This is good for centering the object in the slit

Next let the observing specialist focus the scope.
The slit view optics are not corrected. Only in the sweet spot is the focus corrected.

Next setup the guiding. For supernova, we will most likely use Field Star guiding.
The software picks the guide star and puts a green cross on the star.
If you don't like the star that's selected, click on another star that is circled with a green circle.
Double stars, stars near an edge, stars near the slit, galaxies are bad guide stars.
The exposure time on guiding in the DIS Slit Viewer is independent of the exposure time on DIS.
Set a guide exposure that is not too long (<120sec) but with good signal

Marriner wants http://sdssdp47.fnal.gov/sdsssn_data/APOSNspectro/observing.html
Once a spectrum has been started the ordinal number of a 60 sec exposure slitview fits file should be entered into the log. At the end of the shift, the appropriate slit views should be copied to the appropriate /export/images/Q4UC01/UTxxxx folder along with the other images from the night's observing. It is not necessary to have slit views of the calibration stars. A slit view is only required for the first SN exposure in each series.
As noted earlier The DIS Slit exposure will be put into a folder called DCAM on the local machine with the path set in Status/Preferences/Exposure. The name of the files is automatically chosen by the slit viewer software.

When ready to go turn on Guiding
When guiding go to the DIS window (under Status/Inst) Open the DIS exposure window.
Set the number of exposures and the exposure time.
Set the type to object
Set the file name and go.
Enter exposure in the observing log.

At the end of the session send the observing log to the distribution list.
Also get APO to back up images on CD

VPN Connection notes. APO blocks all ports so I had to have them enable UDP 500 and 10000 ports for the VPN to work